

**Key to Identifying Changed Text:**

Inserted text is Blue Underlined

Deleted text is ~~Red Strikethrough~~

Text deleted from one location - and moved to another location

**Note: DEQ is proposing to make the current, temporary colored art glass manufacturing facility rules (included below) permanent. Therefore, there is no deleted, inserted, or removed text.**

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

**DIVISION 244**

**OREGON FEDERAL AND STATE HAZARDOUS AIR POLLUTANT PROGRAM**

**General Provisions for Stationary Sources**

**340-244-0010**

**Policy and Purpose**

The Environmental Quality Commission finds that certain air contaminants for which there are no ambient air quality standards may cause or contribute to an identifiable and significant increase in mortality or to an increase in serious irreversible or incapacitating reversible illness or to irreversible ecological damage, and are therefore considered to be hazardous air pollutants. It shall be the policy of the Commission that no person may cause, allow, or permit emissions into the ambient air of any hazardous substance in such quantity, concentration, or duration determined by the Commission to be injurious to public health or the environment. The purpose of this Division is to establish emissions limitations on sources of these air contaminants. In order to reduce the release of these hazardous air pollutants and protect public health and the environment, it is the intent of the Commission to adopt by rule within this Division the source category specific requirements that are promulgated by the EPA, and state standards to reduce the release of these hazardous air pollutants. Furthermore, it is hereby declared the policy of the Commission that the standards contained in this Division are considered minimum standards, and as technology advances, protection of public health and the environment warrants, more stringent standards may be adopted and applied.

Stat. Auth.: ORS 468.020 & ORS 468A.310

Stats. Implemented: ORS 468A.025

Hist.: DEQ 13-1993, f. & cert. ef. 9-24-93; DEQ 14-1999, f. & cert. ef. 10-14-99, Renumbered from 340-032-0100

**Colored Art Glass Manufacturing Facility Rules**

**340-244-9000**

## **Applicability**

Notwithstanding OAR 340 Division 246, OAR 340-244-9000 through 9090 apply to facilities located within the Portland Air Quality Maintenance Area that:

- (1)(a) Manufacture colored glass from raw materials, or a combination of raw materials and cullet, for use in art, architecture, interior design and other similar decorative applications, or
- (b) Manufacture colored glass products from raw materials, or a combination of raw materials and cullet, for use by colored glass manufacturers for use in art, architecture, interior design and other similar decorative applications; and
- (2) Manufacture 10 tons per year or more of colored glass using raw materials that contain any of the following metal HAPs: arsenic, cadmium, chromium, lead, manganese and nickel.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

## **340-244-9010**

### **Definitions**

The definitions in OAR 340-200-0020 and this rule apply to OAR 340-244-9000 through 9090. If the same term is defined in this rule and 340-200-0020, the definition in this rule applies to this division.

- (1) “Colored Art Glass Manufacturer” or “CAGM” means a facility that meets the applicability requirements in OAR 340-244-9000 and refers to the owner or operator of such a facility when the context requires.
- (2) “Chromium III” means chromium in the +3 oxidation state, also known as trivalent chromium.
- (3) “Chromium VI” means chromium in the +6 oxidation state, also known as hexavalent chromium.
- (4) “Chromium”, without a following roman numeral, means total chromium.
- (5) “Controlled” means the glass-making furnace emissions are treated by an emission control device approved by DEQ.
- (6) “Cullet” means recycled glass that is mixed with raw materials and charged to a glass-making furnace to produce glass. Cullet does not include glass materials that contain metal HAPs in amounts that materially affect the color of the finished product and that are used as coloring agents; such materials are considered raw materials. Cullet is not considered to be a raw material.

(7) "Emission control device" means control device as defined in OAR 340 Division 200.

(8) "Glass-making furnace" means a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass.

(9) "Metal HAP" means arsenic, cadmium, chromium, lead, manganese or nickel in any form, such as the pure metal, in compounds or mixed with other materials.

(10) "Raw material" means:

(a) Substances that are intentionally added to a glass manufacturing batch and melted in glass-making furnace to produce glass, including but not limited to:

(A) Minerals, such as silica sand, limestone, and dolomite;

(B) Inorganic chemical compounds, such as soda ash (sodium carbonate), salt cake (sodium sulfate), and potash (potassium carbonate);

(C) Metal oxides and other metal-based compounds, such as lead oxide, chromium oxide, and sodium antimonate; and

(D) Metal ores, such as chromite and pyrolusite.

(b) Metals that are naturally-occurring trace constituents or contaminants of other substances are not considered to be raw materials.

(c) Raw material includes glass materials that contain metal HAPs in amounts that materially affect the color of the finished product and that are used as coloring agents.

(d) Cullet and material that is recovered from a glass-making furnace control device for recycling into the glass formulation are not considered to be raw materials.

(11) "Tier 1 CAGM" means a CAGM that produces 10 tons per year or more of colored art glass, but not more than 100 tons per year, and produces colored art glass in glass-making furnaces that are only electrically heated.

(12) "Tier 2 CAGM" means:

(a) A CAGM that produces 10 tons per year or more of colored art glass in fuel-heated or combination fuel- and electrically-heated glass-making furnaces; or

(b) Produces 100 tons per year or more of colored art glass in any type of glass-making furnace.

(13) "Uncontrolled" means the glass-making furnace emissions are not treated by an emission control device approved by DEQ.

(14) "Week" means Sunday through Saturday.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9020**

#### **Permit Required**

Not later than September 1, 2016, all CAGMs not otherwise subject to a permitting requirement must apply for a permit under OAR 340-216-8010 Table 1, Part B, category #84.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9030**

#### **Requirements That Apply To Tier 2 CAGMs**

Effective September 1, 2016, Tier 2 CAGMs may not use raw materials containing any metal HAPs except in glass-making furnaces that use an emission control device that meets the requirements of OAR 340-244-9070.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9040**

#### **Operating Restrictions That Apply To Tier 2 CAGMs**

(1) Tier 2 CAGMs may not use raw materials containing arsenic, cadmium or chromium VI except in glass-making furnaces that are controlled by an emission control device approved by DEQ.

(2) A Tier 2 CAGM may use raw materials containing chromium III in a glass-making furnace (controlled or uncontrolled) if DEQ has established annual and daily maximum allowable chromium III usage rates for the glass-making furnace or group of glass-making furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter of chromium VI and a daily acceptable source impact level of 36 nanograms per cubic meter of chromium VI.

(3) After DEQ establishes the maximum allowable chromium III usage rates for a CAGM's glass-making furnace or glass-making furnaces, the CAGM must comply with the rates DEQ establishes. For the purpose of establishing maximum allowable chromium III usage rates, the following are required:

(a) A source test must be performed as specified below:

(A) Test using DEQ- approved protocols and methods for total chromium, chromium VI, and particulate matter using DEQ Method 5 or a DEQ-approved equivalent method and submit a source test plan detailing the approach to DEQ for approval;

(B) Test for chromium, chromium VI and particulate matter at the outlet of an uncontrolled glass-making furnace; or test for chromium, chromium VI and particulate matter at the inlet of an emission control device and for particulate matter at the outlet of the emission control device;

(C) Test while making a glass that DEQ agrees is made under the most oxidizing combustion conditions and that contains a high percentage of chromium III as compared to other formulas used by the CAGM; and

(D) Keep records of the amount of chromium III used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan.

(b) The Tier 2 CAGM must perform dispersion modeling, using models and protocols approved by DEQ, to determine the annual average and daily maximum ambient concentrations that result from the Tier 2 CAGM's air emissions as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the maximum chromium VI emission rate;

(C) Establish a maximum chromium III usage so that the source impact will not exceed either of the following:

(i) An annual acceptable source impact level for chromium VI concentration of 0.08 nanograms per cubic meter at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities; and

(ii) A daily acceptable source impact level for chromium VI concentration of 36 nanograms per cubic meter at any off-site modeled receptor.

(c) Each Tier 2 CAGM must keep daily records of all glass formulations produced and, until such time as the Tier 2 CAGM has installed all emission control devices required under OAR 340-244-9030, provide to DEQ a weekly report of the daily amount of each metal HAP used.

(4) Tier 2 CAGMs may apply source testing protocols equivalent to those in section (3)(a) to the use of chromium VI in a glass-making furnace to establish maximum usage rates for chromium VI in controlled glass-making furnaces that will prevent the source impact from exceeding an annual acceptable source impact level of 0.08 nanograms per cubic meter and a daily acceptable source impact level of 36 nanograms per cubic meter.



(5) Tier 2 CAGMs are not restricted on the raw materials that may be used in glass-making furnaces that are controlled by an emission control device approved by DEQ, except that the use of raw materials containing chromium III and chromium VI will be subject to maximum usage rates determined by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

**340-244-9050**

### **Requirements That Apply To Tier 1 CAGMs**

(1) No later than October 1, 2016, each Tier 1 CAGM must comply with subsection (a), (b) or (c) for each glass-making furnace or group of glass-making furnaces:

(a) Install an emission control device to control a glass-making furnace or group of glass-making furnaces that uses raw material containing metal HAPs, and that meets the emission control device requirements in OAR 340-244-9070;

(b) Demonstrate that the glass-making furnace or group of glass-making furnaces meets the exemption in section (2); or

(c) Request a permit condition that prohibits the use of metal HAPs in the glass-making furnace or group of glass-making furnaces, and comply with that condition.

(2) A Tier 1 CAGM is exempt from the requirement to install emission controls under subsection (1)(a) on a glass-making furnace or group of glass-making furnaces if that CAGM meets the requirements of subsection (a) for each of the individual metal HAPs listed in paragraphs (a)(A) through (a)(F) below. This exemption is not allowed for a glass-making furnace or group of glass-making furnaces that use raw materials containing chromium VI.

(a) The CAGM shows through source testing and dispersion modeling if necessary, following the requirements of subsections (b) and (c), that the metal HAP concentrations modeled at the nearest sensitive receptor do not exceed the applicable concentration listed in paragraphs (A) through (F). For chromium VI resulting from the use of chromium III, the CAGM may source test for and model chromium VI, or may source test for and model total chromium in lieu of chromium VI to demonstrate that the ambient concentration is below the concentration listed in paragraph (C). If the modeled total chromium ambient concentration exceeds the concentration listed in paragraph (C), then the CAGM may conduct an additional source test to measure chromium VI and model to show that the ambient concentration of chromium VI does not exceed the concentration listed in paragraph (C).

(A) Arsenic, 0.2 nanograms per cubic meter;

(B) Cadmium, 0.6 nanograms per cubic meter;

(C) Chromium VI, 0.08 nanograms per cubic meter;

(D) Lead, 15 nanograms per cubic meter;

(E) Manganese, 90 nanograms per cubic meter;

(F) Nickel, 4 nanograms per cubic meter.

(b) Source testing for the purpose of demonstrating the exemption in this section must be performed as follows:

(A) Test using DEQ -approved protocols and methods for each metal HAP listed in paragraphs (a)(A) through (a)(F) that the Tier 1 CAGM intends to use.

(B) Test for particulate matter using DEQ Method 5 or equivalent; metals using EPA Method 29, CARB Method M-436 or an equivalent method approved by DEQ; and if the Tier 1 CAGM chooses, chromium VI using a method approved by DEQ.

(C) Submit a source test plan to DEQ for approval at least 30 days before the test date.

(D) For each metal HAP to be tested for, test while making a glass formulation that DEQ agrees has the highest potential emissions of that metal HAP. More than one source test may be required if a single glass formulation cannot meet this requirement for all metal HAPs to be tested for.

(E) Keep records of the amount of each metal HAP regulated under this rule used in the formulations that are produced during the source test runs, as well as other operational parameters identified in the source test plan.

(c) Dispersion modeling for the purpose of demonstrating the exemption in this section is not required for any HAP metal that the source testing under subsection (b) shows is not greater than the applicable concentration listed in paragraphs (a)(A) through (a)(F); otherwise, dispersion modeling must be performed as follows:

(A) Submit a modeling protocol for DEQ approval;

(B) Use the EPA-approved model AERSCREEN or other EPA -approved model;

(C) Use the maximum emission rate for each metal to be modeled as determined by the source testing required by subsection (b); and

(D) Model the ambient concentration at the nearest sensitive receptor approved by DEQ. Sensitive receptors include, but are not limited to: residences, hospitals, schools, daycare facilities, elderly housing and convalescent facilities.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9060**

#### **Operating Restrictions That Apply To Tier 1 CAGMs**

(1) Tier 1 CAGMs may not use raw materials that contain chromium VI in any uncontrolled glass-making furnace.

(2) Tier 1 CAGMs are not restricted on the raw materials that may be used in glass-making furnaces that are controlled by an emission control device approved by DEQ.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9070**

#### **Emission Control Device Requirements**

(1) Each emission control device used to comply with this rule must meet 99.0 percent or more removal efficiency for particulate matter as measured by EPA Method 5 or an equivalent method approved by DEQ.

(2) Emission control device requirements:

(a) A CAGM must obtain DEQ approval of the design of all emission control devices before installation, as provided in this rule.

(b) A CAGM must submit a Notice of Intent to Construct as required by OAR 340-210-0205 through 340-210-0250 no later than 15 days before the date installation begins. If DEQ does not deny or approve the Notice of Intent to Construct within 10 days after receiving the Notice, the Notice will be deemed to be approved.

(c) Emission control devices may control emissions from more than one glass-making furnace.

(d) Each emission control device must be equipped with the following monitoring equipment:

(A) An inlet temperature monitoring device;

(B) A differential pressure monitoring device if the emission control device is a baghouse; and

(C) Any other monitoring device or devices specified in DEQ's approval of the Notice of Intent to Construct.

(e) Each emission control device must be equipped with inlet ducting that provides the following:



(A) Sufficient cooling of exhaust gases to no more than the maximum design inlet temperature under worst-case conditions; and

(B) Provision for inlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(f) Each emission control device must be equipped with outlet ducting that provides for outlet emissions testing, including sufficient duct diameter, sample ports, undisturbed flow conditions, and access for testing.

(g) After commencing operation of any emission control device, the CAGM must monitor the emission control device as required by OAR 340-244-9080.

(h) A CAGM must perform the following source testing on at least one emission control device. Source testing done under OAR 340-244-9040(2) may be used in whole or in part to comply with this requirement.

(A) Within 60 days of commencing operation of the emission control devices, test control device inlet and outlet for particulate matter using DEQ Method 5 or equivalent method;

(B) The emission control device to be tested must be approved by DEQ;

(C) A source test plan must be submitted at least 30 days before conducting the source test; and

(D) The source test plan must be approved by DEQ before conducting the source test.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

### **340-244-9080**

#### **Emission Control Device Monitoring**

(1) Each Tier 1 CAGM must perform the following monitoring on each emission control device it uses to comply with this rule:

(a) At least once each week, observe and record the inlet temperature and differential pressure (if applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(2) Each Tier 2 CAGM must perform the following monitoring on each emission control device used to comply with this rule:

(a) At least once each day, observe and record the inlet temperature and differential pressure (if applicable); and

(b) At least once every 12 months:

(A) Inspect the ductwork and emission control device housing for leakage;

(B) Inspect the interior of the emission control device for structural integrity and, and if a fabric filter (baghouse) is used, to determine the condition of the fabric filter; and

(C) Record the date, time and results of the inspection.

(3) CAGMs must observe and record any parameters specified in a DEQ approval of the Notice of Intent to Construct applicable to a control device.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040

**340-244-9090**

#### **Other Metal HAPs**

(1) If DEQ determines that ambient concentrations of a metal HAP in the area of a CAGM pose an unacceptable risk to human health and that emissions from an uncontrolled glass-making furnace at the CAGM are a contributing factor, then DEQ must set a limit on the CAGM's use of the metal HAP of concern in uncontrolled glass-making furnaces, by agreement or in a permit, to reduce such risk. DEQ must consult with the Oregon Health Authority when applying this rule.

(2) Exceeding the limits established under the authority of this rule is a violation of this rule.

Stat. Auth.: ORS 468.020, 468A.025, & 468A.040

Stats. Implemented: ORS 468A.025, & 468A.040